

ABSTRACT OF DISCLOSURE

A contrast compensation apparatus and a method thereof utilize a simplified hardware structure and a low contrast distortion. The contrast compensation apparatus includes a pixel value detection unit to detect a distribution of pixel values of respective pixels of an input image signal, a pixel value limit unit having pre-set luminance limit values and re-configuring the distribution of the pixel values of the respective pixels based on the pre-set luminance limit values, and a mapping unit to set luminance for the respective pixels based on a cumulative distribution function with respect to the re-configured pixel values. When certain portions of an image are rendered very bright or dark, the phenomenon in which the entire image becomes abruptly bright or dark is reduced. Further, the contrast compensation apparatus uses the minimum number of multipliers, adders, and subtractors only, thus having an advantage of simplified structure and using less electric power.